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A METHOD FOR PRODUCING WATER-SOLUBLE DRY EXTRACTS FROM FLAVOR-CONTAINING PLANTS, ESPECIALLY COFFEE AND TEA EXTRACTS

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Coffee and tea extracts in 100% soluble dry form are known and are produced by various methods. They are all based on the principle of making extracts from coffee, tea, etc., and converting them to powder by drying. According to experience the flavor losses with these production procedures are high, which is essentially due to the fact that external air comes into contact in the extraction and also in the drying, for example, by atomization. For this reason, to improve the retention of flavor, methods have been proposed in which the flavor substances are bonded to a so-called carrier such as molasses, glucose, sugar, maltose, etc. Manufacturers claim that the latter process has better retention of flavor; nevertheless it has been found that the flavor is still not equivalent to that of freshly roasted coffee. The flavor carriers are not capable of conveying, much less maintaining, the good flavor of freshly roasted coffee, and there is also the related disadvantage that an aftertaste that is not agreeable to everyone arises. For certain diseases, in particular diabetes, the flavor carriers, if they consist of maltose, sugars, etc., are likewise not always conducive to good health.

The object of this invention is now a method for producing water-soluble dry extracts from flavor-containing plants, especially coffee and tea extracts, which is characterized by the

fact that the plant material is extracted under exclusion of outside air and by using an aqueous solution containing pectin and an organic acid or a water-soluble salt of such an acid that does not attack the flavoring substances, and the resulting extract is dried by atomization without bringing it into contact with outside air after the extraction.

Example 1:

60 kg of thoroughly roasted and finely ground coffee (this can also be caffeine free coffee) is spread in thin layers in an extraction apparatus and the apparatus is hermetically sealed. The spread coffee is now subjected to a preextraction. For this purpose a solution is poured through a sprayer under pressure onto the spread coffee. The solution is formed of about 160 L distilled calcium-free water, 1800 g fermented odorless lemon juice and an alkaline sodium compound like sodium carbonate. This solution favors the extraction or leaching the flavoring of substances being attacked or degraded. According to observations the coffee extract obtained in this way loses the bitterness of the caffeic acid. The first extract obtained from this preextraction is again sent back to the extraction apparatus by vacuum without being exposed to air, heated and in a second pass poured over the spread and already once extracted coffee, so that the latter is again leached out and the flavor content of the essence or extract is enhanced. After this second extraction the resulting extract is sent to a metal free storage vessel through chilled metal-free tubes consisting of glass or clay. The extraction apparatus, the tubes and the storage container are all hermetically sealed, so that the extract can never come into contact with outside air. From this hermetically sealed storage vessel the flavor-rich coffee extract is sent under pressure to the atomizer, where it is converted to a dry powder in a substantially known way, optionally after being cooled. The resulting dry powder has a larger volume than the products obtained by the previous methods, and moreover it is very rich and highly aromatic, in spite of the fact that no special flavor carrier had been added.

Example 2:

30 kg tea such as black tea is spread out in thin layers in an extraction apparatus. A preextraction and then a postextraction as in Example 1 is carried out. The solution is prepared of water, fermented odorless lemon juice and an alkaline sodium compound like sodium carbonate, with about 400 g being sufficient. The further treatment, conduct of the atomization and conversion to dry form under complete exclusion of air from outside takes place in a manner analogous to the first embodiment example.

The dry product obtained in Examples 1 and 2 is rapidly and completely soluble in liquids such as water, milk, etc. 1-2 g of the dry coffee product or 1/2-1 g of the dry tea product is sufficient to produce a cup of aromatic coffee or tea.

An extraordinarily highly flavorful dry product can be obtained in a relatively simple and rational mode of production without having to use special flavor carriers. The composition of the extract solution favors an effective recovery of extract and aroma. Since everything up to and including the atomization takes place under complete hermetic exclusion against outside air, so that contact with air is absent in all phases and losses of flavor due to diffusion or evaporation into the outside air are avoided, one obtains a particularly flavorful end product. The pectin in the extraction solutions used in the examples comes from the lemon juice. It probably contributes to the flavor substances being retained in their natural freshness.

Claim

A method for producing water-soluble dry extracts from flavor-containing plants, especially coffee and tea extracts, which is characterized by the fact that the plant material is extracted under exclusion of outside air and by using an aqueous solution containing pectin and an organic acid or a water-soluble salt of such an acid that does not attack the flavor substances and the extract is dried by atomization without bringing it into contact with the outside air after extraction.

Subordinate claims

1. A method as in the primary claim, which is characterized by the fact that the plant material is treated a second time in succession with the same extraction liquid without bringing the latter into contact with outside air between these extractions.

2. A method as in the main claim and Subordinate Claim 1, which is characterized by the fact that the solution with which extraction is carried out contains citric acid or water-soluble salt thereof.

3. A method as in the main claim and Subordinate Claims 1 and 2, which is characterized by the fact that fermented and odorless lemon juice is used to produce the extraction solution.

4. A method as in the main claim and Subordinate Claims 1-3, which is characterized by the fact that an alkaline sodium compound is used to produce the extraction solution.

5. A method as in the main claim and Subordinate Claims 1-4, which is characterized by the fact that the extraction solution is poured onto the extraction material hot and under pressure through sprayers.

6. A method as in the main claim and Subordinate Claims 1-5, which is characterized by the fact that the aqueous extract that is obtained is cooled before atomization.

7. A method as in the main claim and Subordinate Claims 1-6, which is characterized by the fact that the extraction solution is heated between the two extractions.

8. A method as in the main claim, which is characterized by the fact that the plant material to be extracted is spread in thin layers and doused with the extraction solution.